

Serial No.10/628,380
Amendment dated June 18, 2007
Reply to Office Action of March 22, 2007

Docket No. LT-0037

Amendments to the Drawings

Replacement Sheets have been submitted for Figures 2-7 to overcome the drawing objection.

REMARKS

Claims 5, 7, 8, 10-14, 16, 18, 27, 29, and 30 are pending. In this paper, Replacement Sheets have been submitted to overcome the drawing objections.

I. The Rejection under 35 USC § 102(e)

In the Final Office Action, claim 5 was rejected for being anticipated by the O'Brien patent. Applicants request the Examiner to withdraw this rejection for the following reasons.

Claim 5 recites a gain control means connected to the plurality of pulse width modulation means for receiving the audio signals received at the plurality of pulse width modulation means. In addition to these features, claim 5 recites that "the gain control means independently controls gains of the received audio signals according to individual channels." These features are not disclosed by the O'Brien patent.

The Examiner relied on the disclosure at column 2, lines 8-39, of the O'Brien patent to reject claim 5. Here, O'Brien patent discloses a control circuit 114 for adjusting the volume of an audio signal. However, the input audio stream is disclosed to be a serial stream. As such, it is clear that the stream is input on only one channel in Figure 1 of O'Brien and that volume control circuit 114 only controls the volume of the audio signal on that one channel.

In contrast, the gain control means of claim 5 independently controls gains of the received audio signals according to a plurality of individual channels. See, for example, Figure 13 of Applicants' drawings where the gain of the audio signals on channels 1, 3, and 5 are controlled

independently from the audio signals on channels 2, 4, and 6 which are controlled by a different gain level. Because Figure 1 circuit in O'Brien only controls the volume of only one audio channel that is received in a serial data stream, it is clear that O'Brien does not disclose the gain control means of claim 5.

Applicants further note that O'Brien discloses a multiple (e.g, 4) channel noise shaper 76. However, neither this circuit nor any of the circuits coupled to shaper 76 include the type of gain control means recited in claim 5.

Because the O'Brien patent does not disclose all the features of claim 5, it is respectfully submitted that O'Brien does not anticipate this claim. Withdrawal of the § 102 rejection is therefore respectfully requested.

II. The Rejection under 35 USC § 103(a)

Claims 13 and 14 were rejected for being obvious in view of a Kondo-O'Brien combination. Applicants request withdrawal of this rejection for the following reasons.

Claim 13 recites a plurality of gain controllers that each receive one of the audio signals received for a corresponding one of the plurality of pulse width modulators. In addition to these features, claim 13 recites that "the gain controllers independently control gains of the received audio signals according to individual channels." Claim 13, therefore, recite features similar to those which patentably distinguish claim 5 from the O'Brien patent.

As for Kondo, this patent was cited for its disclosure a reader, tuner, decoder, and at least one speaker. Kondo does not teach or suggest the function of the gain controllers of claim 13. Accordingly, it is submitted that claim 13 and its dependent claims are allowable over a Kondo-O'Brien combination.

Claims 16, 18, 19, 27, and 29 were rejected for being obvious in view of a Kondo-O'Brien-Beard combination.

Claim 16 ultimately depends from claim 13. In order to render claim 16 obvious, the Beard patent must therefore teach or suggest the features of claim 13 missing from the Beard patent. The Beard patent discloses a control circuit 40 which disables operation of a pulse width modulator 24. However, Beard does not teach or suggest a plurality of gain controllers which independently control gains of the received audio signals according to individual channels.

Moreover, Beard only discloses receiving an input signal along one channel, not multiple audio signals along a respective multiple number of channels. Accordingly, Beard does not independently and individually control the gain of some of those channels to the exclusion of other channels as is the case with the claimed invention.

Moreover, claim 16 recites "a plurality of controllers that independently enable the plurality of pulse width modulators according to individual channels." (These feature are shown, for example, in Figure 15 of Applicants' drawings where channels 1 and 2 are enabled and channels 3-6 are disabled). Beard does not teach or suggest independently enabling a plurality of pulse width

modulators on an individual channel-by-channel basis as required by claim 16. These features serve to further distinguish the invention of claim 16 from the cited combination.

Based on the foregoing differences, it is respectfully submitted that claim 16 is allowable.

Claim 18 recites “a plurality of controllers that independently turn on/off the plurality of pulse width modulators according to individual channels.” In view of the foregoing discussion, it is clear that these features are not taught or suggested by the Kondo, O’Brien, and Beard patents, whether taken alone or in combination.

Claim 19 recites (1) a plurality of gain control means each independently controlling gains of the received audio signals according to individual channels of the pulse width modulators and (2) a plurality of control means for independently turning on/off the plurality of pulse width modulators according to said individual channels. As indicated above, these features are not taught or suggested by the recited references, whether taken alone or in combination.

Claim 27 recites “a plurality of signal controllers coupled to the plurality of modulators to independently control at least one of input signals and output signals of the plurality of pulse width modulators, wherein the plurality of signal controllers comprise a plurality of controllers that independently enable the plurality of pulse width modulators according to individual channels.” These features are not taught or suggested by the recited references, whether taken alone or in combination.

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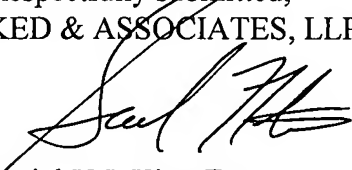
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Claim 29 recites that "the gain controllers independently control gains of the received audio signals according to individual channels." These features are not taught or suggested by the cited references, whether taken alone or in combination.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Withdrawal of the rejections and objections in the Final Office Action and timely allowance of the application are respectfully requested.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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